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COOP'S TECHNOLOGY DIGEST

-A Timely Report On The World Of Communications-

Published as a confidential industry newsletter ten times per year by electronics and technology author *Robert B. Cooper*. Reports source checked for accuracy prior to publication; readers are cautioned to conduct their own verification of data prior to formulating business judgements based upon reports here. Data of unverified authenticity may be so-labelled as a guide to reader caution. The publisher draws upon 36 years of leading edge electronic industry media experience but can be misled by those with clever agendas. *Entire contents Copyright 1996* by Robert B. Cooper; when 'lifting' material please be courteous enough to credit source ("*As reported in Coop's Technology Digest for* ...."). CTD accepts no advertising nor source payment for publication of material here. Making "extra copies" for staff use is prohibited without our written permission. Corporate libraries copying this publication for distribution are in violation of our copyright; please query for reasonable reproduction rights. Subscription rates and contact numbers at bottom of this page.

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COOP'S TECHNOLOGY DIGEST

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THE PROGRAMMING BOUQUET

An unusual event transpired during (the) South Pacific Region Satellite & Cable Show held in Auckland late in January; a man at a podium delivering a presentation was interrupted two times by spontaneous applause. Johannes J. Firsbach is Head of the Programme Distribution Department for Germany's Deutsche Welle and he had not anticipated the applause midstream in his presentation.

Firsbach came to SPRSCS from Cologne, Germany to explain Deutsche Welle's most unusual offer to broadcasters and cable networks in the Pacific. Sign an agreement with DW and they will grant you unrestricted access to 24 hours of digitally delivered satellite television programming 365 days per year. Your cost as a broadcaster for this programming would be $0 (zero) dollars per year. Totally free programming, created with built-in interstitial windows into which you may insert your own local advertising messages for a minimum of 2 minutes per quarter hour, 8 minutes per hour. And within each 24 hour day, 10 hours of programming is in English (plus 2 in Spanish, 12 in German).

"*There are no fees, no restrictions, no limitations to use of this programming save one; you may not further divide the broadcast segments beyond our own interstitial breaks. The programming is being delivered to you, your broadcast station, your cable system using the latest DVB Compliant MPEG (digital) format. With the television programming are 20 audio tracks including a data channel that features the latest world news and background material which will play directly on your PC screen. There is no commercial advertising in our programming.*"

In an era of user pays and complex user rights agreements, the invitation to access and reuse a full 24 hour programme schedule without restriction was a bit of a bombshell; and thus, the applause.

Deutsche Welle (DW) is funded by the German Federal Government at a level of 600,000,000 Dm per year. It is the international broadcasting arm of Germany; think of it as a combination of VOA plus PBS in America, Radio Canada International plus the CBC in Canada, or Radio Australia plus ATVI here in the Pacific. DW produces both radio and television programming for distribution around the globe. There is no similar agency nor activity in New Zealand.

DW has leased a full 36 MHz transponder on AsiaSat 2, now an operational satellite at 100.5E. The satellite reaches from Ankara (Turkey) to Vladivostok, the Arctic north to Tasmania and Invercargill; 63% of the world's population from a single satellite. And for DW this is the fifth (and final) satellite in a chain that now allows the German broadcaster to deliver 24 hour programming to 99.2% of the world's people. By comparison, DW reaches more of the world's population than TV3 reaches New Zealanders within our country.

It was in the 1930s that the more technically advanced nations of the world "discovered" the world-circling capabilities of short-wave radio; powerful radio transmitters using carefully selected frequencies became "voices" of individual nations; the BBC was a pioneer in this field as was Hitler's Germany. Short-wave radio was recognised as a "boundary breaker" because radio programming could be delivered across vast expanses penetrating border check points with immunity. By the 1950s a post war world turned the short-wave frequency region into a tool of international policy and propaganda. Stations with specific ideological purposes such as Radio Free Europe sprang up placing transmitters encircling entire political regions for the singular purpose of providing uncensored news and points of view. Short-wave continues today to be a powerful tool to deliver messages of hope, truth, and overt propaganda to people still caught behind national borders that deny access to uncensored news and information.

Satellite delivered television is the latest technological tool of world governments. The DW service, more advanced than some, is hardly unique in this respect. As a matter of fact, DW is not first to encircle the globe with national TV programming. Portugal, China and Japan were first past the post in recent times while Russia has maintained a "world-wide" TV presence for more than a decade. And within the coming 12 months a sizeable number of additional "national" television services will join the growing list of countries that seek to use satellite television as a delivery tool.

Why?

Six hundred million deustche marks (NZ$620,000,000) is a mind boggling investment in reaching the world with a daily diet of Teutonic programming. What is the justification?

To support the DW service viewers are encouraged to be readers of "DW tv," a four colour slick programme guide that provides detailed advance programme listings for each month. The guide advises:

"*Our aim at DW-tv is to show you, our viewers, the whole of Germany in all its regional diversity and its federal structure.*"

February is the traditional Carnival Month throughout Germany, origins in the recognition of the religious traditions that culminate in Ash Wednesday. Viewers are learning that while the Rio or New Orleans Mardi Gras (with the same origins) may be better known, the German celebration of the same spiritual foundation is hardly a lesser event. The guide advises:

"*On the wild last weekend of Carnival, our youth magazine* (H.E.A.T.) - *this time entitled 'Party party' - has its own celebration. On Rose Monday follows a live transmission in Boulevard Germany of the Carnival procession in Cologne. We'll be right in the thick of things, in the middle of the legendary 'Rosenmontag' parade of Carnival enthusiasts. Carnival in Cologne is just one of our many outside broadcasts from the different parts of Germany during the month, aimed at reminding you constantly that DW brings you a little bit closer to Germany and its people.*"

DW receives every pfennig of support directly through Federal government coffers. Unlike the similar American PBS, Canadian CBC or Australian ABC services, DW allows no corporate funding for backing, even indirectly. With strenuous emphasis, it denies that programming contains either federal government direction nor corporate support in return for "air time." What, then, is the incentive for this expenditure?

The 1995 Annual Report provides clues. The service is an outreach to German citizens living outside the country; as many as 9,000,000 at any point and those travelling (on average

DW SAMPLER: English Language Programmes

Time NZT	Feb. 23	Feb. 24	Feb 25
1:00 PM	Journal	Journal	Journal
1:30	Close-Up	Story of the Week	H.E.A.T.
2:00	Journal	Journal	Top 40
2:15	Boulevard Germany	Boulevard Germany	
6:00	Journal	Journal	Journal
6:30	Sports Report	Perspectives	In the Same Boat
9:00	Journal	Journal	
9:15	S-Zett / News in Depth	Church & Society	
9:30	Every Little Second Counts	Tracks In Time	
10:00	Sports Report		
10:30	Close-Up		
1AM	Journal	Journal	Journal
1:15	Boulevard Germany	Boulevard Germany	Inside Bonn
2AM	Sports Report	Perspectives	
2:30AM	Every Little Second Counts	Tracks In Time	
5AM	Journal		Journal
5:15AM	Boulevard Germany		H.E.A.T.
6AM	Perspectives		Top 40
6:30AM	Story of the Week		
9AM	Journal	Journal	Week Review
9:30AM	Tracks In Time	In the Same Boat	European Journal

2,500,000) beyond the German borders. And it is a bridge between the German homeland and the tens of millions of German descendants who now live around the globe. But there is more to the content than reaching German speaking ex-pats and travellers. Out of each 24 hour broadcast day DW schedules ten (10) hours in English and two (2) in Spanish; two languages chosen because of their "universality."

The German economy like most industrial nations is closely tied to exports and expansion of their product markets around the world. Hardly uniquely, the German economy planners from the government to the private sector recognise the growing importance of the economies throughout Asia, Africa and South America. With Taiwan, Thailand, and Malaysia economies growing at double digit rates annually, these countries represent huge new market opportunities for German manufactured products and skills. In a single phrase, DW is a "Business Calling Card" that precedes the arrival in these countries of German products and services and re-enforces that message of German skills and quality on a daily basis after the German economy has begun to infiltrate a foreign market. Simply put, it is good 'PR'. And through AsiaSat 2, DW crosses national boundaries containing 63% of the world's population.

Regional Television Services

Satellite television delivered programming is rapidly becoming the "calling card" for nations throughout the world; virtually every European nation now distributes its national network via satellite within Europe and you are as likely to view Turkey's TRT in the Acores or London as Ankara, Algeria's TV7 in Helsinki and Cairo as in Tunis.

Here in the Pacific a number of Asian nations are now exporting international versions of their own home grown television with many more scheduled to begin these services over the coming 18 months. Indonesia's RCTI, TVRI, SCTV, TPI, Anteve and Indostar have now grown to Asia-Pacific wide services using the newly launched Palapa C1 satellite. On the same satellite are Malaysia's RTM-1 and RTM-3, GMA from the Philippines, and the television arm of Radio Australia, ATVI (Australian Television International). The Australian service is openly described as a "foreign relations project" on behalf of Australia the nation and after a rough bout over continued funding during 1995, the service seems to be growing rapidly in viewer acceptance. In December ATVI expanded to also relay its programming on a Rimsat satellite with India as the target audience. Each of these services receives partial or full funding through their respective national government.

Regional satellite service has not escaped the interest of commercial broadcasters. Australia's channel 9 operates the Papua New Guinea national service EMTV. Most of the typical EM TV broadcast day comes directly to PNG via Optus satellite from Australia 9 but that is due for a change late this tear.

Geoff Kong, EM TV General Manager:

"*We began service (1993) with a primary interest of reaching throughout the nation (PNG) with its first 'national' TV service. Satellite (Palapa B2P at the time) was a quick, expeditious method of achieving instant national coverage. Early in 1995 we switched to the Rimsat G2 satellite (142.5), largely to improve our coverage in the areas to our south and east. This was the beginning of testing our ability to become a service for an area larger than PNG alone.*

"*Our best gauge of who is watching and using the service is from the record of our programme guide fax polling (*EM TV provides a complete week's advance programme guide each Wednesday to anyone calling their fax polling number*). From last April we have seen a steady growth throughout the Pacific. It is now apparent we have a penetration that is growing faster beyond PNG than within and this leads us to a rethinking of our role as a broadcaster.*"

EM TV now, in fact, believes its long term future role is to be a "Regional (commercial) television service" serving not only PNG but all of the (south) Pacific as well. Their present wide reach, using Rimsat, could well be expanded by shifting to a new satellite on 1 January (1997); their present Rimsat contract expires 31 December.

"*We have always acquired programming based upon our primary mission of being a PNG national service; our thought process is changing and with a deliberate view of serving PNG plus the (*south*) Pacific, we must begin to transition into a programming package that has wider appeal.*" Sports would be a major programming area, especially on weekends. Already they have encountered problems when ESPN decided to take some of the cricket tests for the first time during December and January. "*Our present Rimsat coverage overlaps ESPN, especially in India, and we were forced to cancel plans to carry cricket tests previously scheduled because ESPN bought these rights for India.*" Ideally EM TV would leave India (and the actual Asian continental area) to Indians and others. The "perfect" satellite for EM TV may not yet exist; it would concentrate coverage from PNG south and east to include French Polynesia westward to Perth. One such possibility is new Intelsat 801 scheduled for operation in July-August.

How many commercially operated free to air satellite services might the proposed EM TV "regional service area" support? EM TV is convinced "at least one" and they hope to be first to offer such a regional service.

Their "first" could be limited to being English-language-first. French Polynesia's RFO service, long a staple on Intelsat 180, has reached its own decision; it will remain in free to air analogue and it will expand its area of coverage interest. RFO is a Papeete based terrestrial service and utilises satellite to feed relay stations scattered throughout the Tuamoto

Archipelago (French Polynesia). The same satellite beam also reaches other French speaking territories in Melanesia; Wallis and Futuna, New Caledonia and Vanuatu. RFO as seen on satellite is but one of two "national" service channels from Papeete and within the next 12 months it will be joined on satellite by RFO-2, the second Tahitian terrestrial channel. The present RFO service suffers because Intelsat at 180E is operating in end-of-life inclined orbit and this means satellite dishes must "track" the satellite through a figure 8 motion each day. With two new Intelsats scheduled for operation in the 174-177-180E region by end of year, this inclined orbit tracking condition will end. The replacement Intelsat satellites will not only be orbit-stable, they will be significantly stronger; so much so that antennas as small as 2 metres will produce first class pictures from the 36 dBw transponders. Initially, these new VIII (8) series satellites will be located at 174 and 177E. Intelsat is attempting to sell users such as EM TV and RFO on the advantages of being located on the same satellite, most probably 174E, to create a (south) Pacific regional satellite for DTH and cable system feeds. The concept of establishing a single satellite as "home" for all DTH and cable services broadcasting to a region (such as the south Pacific) is hardly novel; virtually all of Europe, and North America, has discovered the advantages of co-locating as many services as possible on a single satellite. This greatly simplifies antenna installations for receive terminals: One dish, many programme channels. If Intelsat fails to attract a "neighbourhood " of users in 1996, the next PanAmSat satellite for the Pacific (late 1997 - early 1998) will most likely try the same approach.

A number of Asian broadcasters are readying their own "assault" on international audiences. On February 10th, Manila (Philippines) broadcaster IBC-TV began satellite service on a Rimsat satellite serving portions of the Pacific and much of Asia. This Filipino channel, quite deliberately,

FREE-TO-AIR NATIONAL SERVICES NOW AVAILABLE TO NEW ZEALAND

Service	Satellite
WorldNet / USA	I180
RFO "1" / Tahiti	I180
CCTV / China	PAS-2 & AsiaSat 2
NHK / Japan	PAS-2
EM TV / Papua New Guinea	RGz2
Radio TV Portugal	AsiaSat 2
RAJ TV Madras, India	RGz 1

FREE-TO-AIR NATIONAL SERVICES COMING ON LINE

Service	Satellite	Scheduled Start
Deutsche Welle Germany	AsiaSat 2	April 1996
Radio TV Spain	AsiaSat 2	April 1996
RAI Italy	AsiaSat 2	April 1996
TV5 France	AsiaSat 2	April 1996
RFO 2 Tahiti	Intelsat 180	December 1996

SERVICES AVAILABLE IN REGION NOT PRESENTLY RECEIVED IN NEW ZEALAND

RCTI Indonesia	Palapa C1
RTM Malaysia	Palapa C1
TVRI Malaysia	Palapa C1
Canal France International	Palapa C1
TV Australia International	Palapa C1
SCTV Indonesia	Palapa C1
An-Teve Indonesia	Palapa C1
GMA Philippines	Palapa C1
TV Indostar Indonesia	Palapa C1
Singapore TV International	Palapa C1
Radio TV Brunei	Palapa C1
IBC Philippines	RGz 1

programmes more than 90% of its broadcast day in English featuring such staples as Power Ranger (recently dropped after viewer protests in New Zealand). The numbers are very seductive; their Manila channel 13 terrestrial transmitter reaches 13,200,000 people; through Rimsat, they add an additional 1,346,000,000 potential viewers.

SPACE Forum 1996

"*I am sure it would not be out of place to state* that the awesome push by Deutsche Welle into the Pacific (as well as the other European programmers they will bring along with them) will be of immense importance to all users of satellite signals. As well, what they are doing is a rather pointed barb directed at our own so-called national programmers in the Pacific to get on with the job of providing programming to the entire region." (Eric Fien, *Satellite System Installers, Australia*).

"*Television New Zealand and the Australian ABC* have an obligation to at least match the effort of the Europeans here in the Pacific. If they do not, the Pacific area of influence will be eroded by Europeans and Asians who have properly figured out that the best tool of influence for capturing people's minds is the television set." (Robert Kennedy, *cB Satellite Services, Fiji*)

"*We are not going to stand idly by* and watch European and Asian broadcasters intrude into our Pacific region. I believe there are sufficient market opportunities in the Pacific to justify a package of French language programme channels delivered via one satellite to all of the Pacific simultaneously and we are actively negotiating for transponder space for such a package at this time." (Raymond Wohler, Wohler Communications, Papeete)

"*The amount of aid designated by the governments* of Australia and New Zealand for distribution throughout the Pacific annually could be easily restructured to support as a minimum a single channel of international programming from both Australia and New Zealand. If these two regional leaders do not make such a move, the influence exerted by both countries in Pacific affairs will, I predict, be weakened in favour of both Asian and European countries." (Busby S. Kautoke, Prime Ministers Office, Nukualofa, Tonga)

During SPRSCS the Pacific area satellite trade association, SPACE, conducted a pair of membership forums which allowed the trade association membership to structure working goals for 1996 and after. SPACE members from beyond Australia and New Zealand were especially vocal and critical about the decision by Television New Zealand that it would eliminate all free to air telecasting via satellite in favour of encrypted transmissions. Further, because TVNZ refuses to allow access to their now encrypted transmissions at a time when other broadcasters such as EM TV and RFO are expanding their free to air transmission schedules, there was a unanimous feeling within the forum that New Zealand as a country was abandoning the Pacific as a target service area.

"*In the broad world of aid grants* administered by both Australia and New Zealand there are dozens of agencies participating within each government. I must question how the overall effect of these grants is monitored, and whether there is a single, central authority that overviews the impact of all of these individual aid programmes. Most aid programmes are narrowly defined, targeting very small groups of specialised recipients. With the exception of emergency hurricane or natural disaster relief, virtually none of the aid programmes seeks to reach a broad cross section of peoples even within one country. The influence of television is awesome, it permeates the full population of a region, and it shapes minds by creating impressions that are not easily countered. If New Zealand and Australia are not careful here, future generations throughout Melanesia and Polynesia will believe Germany, Japan and other nations are more important to their future than either New Zealand or Australia." (Steffen Holzt, Studio 7, New Caledonia)

"*New Zealand has dropped the ball*; it remains to be seen if they can pick it up again." (Robert Kennedy, Fiji)

Television New Zealand does operate a "Pacific Service" (see CTD 95-6-19, p.2). Through their digital encrypted service feeds on Intelsat 180, a nightly news programme and a handful of sporting events are resold to broadcasters in Niue, Fiji, Cook Islands, Nauru, Vanuatu, Chatham Islands and Western Samoa. Prior to February-March 1995, these programmes were fed to the Pacific "affiliates" in unencrypted form using standard analogue. The change over to digital was an important decision for TVNZ as it allowed them to bring in and redistribute as many as four separate programme channels simultaneously on a single Intelsat transponder.

Unfortunately, even this "token" distribution each day was eliminated from non-affiliates with the move to digital transmission. By selecting a digital format which is not available to ordinary users, and by refusing even to consider authorising individual users who are willing (there are very few) to spend the NZ$7,000 to purchase one of the special NTL receivers, TVNZ has eliminated all vestiges of a New Zealand presence on satellite for the Pacific. And even if TVNZ were to make available these "closed feeds" to the Pacific at large, an average of less than 1 hour per day of New Zealand programming would be a poor substitute for the 18 to 24 hour broadcasting days now common with Deutsche Welle or even PNG's EM TV.

"*Nobody thinks of PNG as a 'regional political power*'; but give EM TV another year to grow its present service schedule into a full regional service available free to air to the entire region, and I predict that people will soon be saying '**New Zealand-who?**'." (Steffen Holzt, New Caledonia)

A Matter of Accomodation?

PALAPA C1 IS BITTER DISAPPOINTMENT

BUT -

These May Be Early Days

Indonesian replacement satellite "C1" was launched safely to geostationary orbit of 113E on February 1st where following checkout and testing it would replace aged earlier generation satellite B2P. The older satellite has been a workhorse for cable and broadcast programmers serving southeast Asia and portions of eastern India. Programmers on board include American movie service HBO, TNT + Cartoons, CNNI, Discovery and ESPN.

There are two separate C-band transmission antenna patterns on C1; one nearly duplicates the coverage pattern of B2P while a second enlarges that coverage pattern to include virtually all of Australia, all of New Zealand and much of the central and western Pacific. The New Zealand "footprints" are especially tantalising as at 38 dBw they would provide extremely high quality service to DTH and cable system headend antennas as small as 2 metres in diameter.

Initial check out was completed on February 13th, a quick turn around from launch and between 8PM NZST on the 14th and 1AM on the 15th, a transfer of most of the B2P programmers was made to the new C1 satellite. Observers in New Zealand and Australia quickly spotted the new signals, which represented the first time this satellite location had been seen on dishes in the 3m size range in NewZealand. Alas, viewing of the more than 20 new channels of programming was short lived.

At the time of the transfer to C1 it appears Palapa engineers were utilising the "Asian Standard" beam of the satellite, not the Asia + Pacific beam. Signals were viewable but barely so in New Zealand. Observer reports from Australia, Thailand, New Caledonia plus New Zealand watched with some dismay as the initially stronger signals gradually deteriorated channel by channel. By the 18th of February the signals from C1 as measured in New Zealand had essentially returned to the same levels as the the replaced B2P; less than 3 dB above the noise on a quality cable television 4.5m antenna (for DTH purposes the signals would need to be 8 to 10 dB stronger than they presently are; for cable TV, 5-6 dB stronger than at present).

Combining observations with unofficial statements originating at C1 programmers, here is what appears to have happened:

1) The testing of C1 at 113E is complicated by the existing operation of B2P from the same orbit position. A signal uplinked to one hits them both and the only way to control the retransmission process is to manually turn on and off individual transponders (by ground control) for each satellite.

2) The tests February 14-15 prove that C1, the satellite, is alive and well. However, even when testing many transponders had measured signal levels in Thailand and the South Pacific which were 3 to 7 dB weaker than had been forecast by Palapa prior to launch. This could be on purpose (i.e., testing was done at less than full power), or, it could signify a problem with C1.

3) Observers in south east Asia did find some of the transponder signals through C1 to be at or even above the predicted levels on February 14 when the initial hand over from B2P to C1 was taking place. Unfortunately for users, these signals were then "backed off" (power output reduced by Palapa control engineers) within 24 hours of hand over.

4) The brief testing in mid-February, followed by a reduction in power to B2P levels, startled many observers who believed C1 after all of thge advance publicity was going to be "operated" (by ground control) at levels that at best only mirrored older B2P. Subsequrently, an unofficial advisory from Palapa related that the mid-February testing will be followed by additional, similar testing over the next four weeks. The same source says the "formal" hand over of service from B2P to C1 will not take place until March 23. CTD was unable to verify this date or statement prior to publication.

What this means is that for the present C1 programming, optimistically seen as a wealth of new programming for the Pacific region, is not available to us for the time being. Whether it will be available after March 23rd remains uncertain..

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TECHNOLOGY BYTES

...BITS and BYTES you may have missed in the rush to make a buck

February 23, 1996 / Issue 96-01-24

Satellite TV and Radio

PanAmSat Asia's Cynthia Dickins, speaking at SPRSCS in Auckland (January 26), suggested that while PanAmSat will be converting all of its company operated satellite service digital "beds" (transponders) to a DVB Compliant format, there may not be a uniformity around the world within the PanAmSat organisation. While stopping short of announcing the DVB Compliant hardware supplier for the Pacific Ocean region, she did suggest that it might be Scientific Atlanta (SA already has supplied the non-DVB Compliant MPEG video uplinking equipment to PanAmSat for PAS-2). The change over from the present SA MPEG 1.5 to a DVB Compliant format is date uncertain at this time because of multiple logistical solutions. Some of the programmers have a considerable established base of receivers in place (CTN, the Chinese Television Network, uplinking through PanAmSat in Hong Kong reportedly has over 1,000 of the SA D9222 receivers in use in the Pacific and Asia). For each of these receiver locations, the present D9222 receivers will require a change-out to the new DVB Compliant model. However, the longer it takes to effectuate the changeover the larger the installed base of D9222 units becomes. Dickins tells CTD, "*Timing is everything and the receiver supplier must be able to supply a tremendous quantity of (receiver) units all at about the same time.*" On PAS-2 there are presently three separate SA MPEG 1.5 format C-band transponders in use by PanAmSat; two originating in Sylmar (California) and another at Hong Kong. The Sylmar transponders carry less traffic than the Hong Kong uplink which is now filled with programme users. The Asian market has been more receptive to the concept of digital video than the American programmers going through Sylmar and in fact the US domestic use of MPEG compressed digital video lags behind the rate of acceptance of this newer technology than most other areas of the world. Several of the programmers using the SA 1.5 format have begun notifying affiliate users (cable, DTH and SMATV) that they will supply at minimal cost to the affiliate replacement receivers to substitute for the present SA D9222 units, "*when the change over occurs.*" PanAmSat would like to schedule the change over for midyear but like most MPEG projects at this time the actual date for change will be determined by the ability of the receiver supplier to supply replacement units to the field. Multi-addressed receivers are a special problem. A number of DTH receivers in place have been authorised to receive services with CMT, CCTV and ABN a frequent combination. It is unlikely PanAmSat will be converting both Sylmar and Hong Kong uplinks to DVB Compliant service simultaneously which means those with multi-addreessed receivers are likely to lose some services for the period of time during which Hong Kong and then Sylmar uplinks are modified for DVB Compliant format.

Nonconformist Discovery Channel, having selected the non-DVB-Compliant General Instrument MPEG 2 system as their new format for PAS-2 service, has notified cable and other contract affiliates it is now shipping the new GI IRDs and all affiliates should receive the units before the 7th of March. Discovery plans to install the new MPEG 2 encoding equipment at their Singapore uplink facility between 26 February and 1 March, and will commence late evening / early morning testing of the new uplink equipment in "mid-March." During these test periods each affiliate will be required to have an engineer available to make adjustments to the new IRD units. The scheduled date for turnoff of their present B-MAC service on PAS-2 is 1 April with MPEG-2 service to begin at that same time. (Discovery Channel, Mark Lay at fax 852-2810-8456).

The Music Zone, available since October through PAS-2 transponder 9 in SA 1.5 digital, will cease to be available in the Pacific on 1 March. The service is carried by cable TV operators in Gisborne and Greymouth, has been under consideration at Sky Network (New Zealand). The service is being terminated because rights to transponder 9 on PAS-2 are being sold to Fox Sports. Fox, a part of the Rupert Murdoch satellite empire, has been utilising one of the five transponder 9 programme channels for transport of USA originated sporting events to the Australian Foxtel and Galaxy pay television services. With the purchase of the transponder by Fox, it will now have five times the transponder capacity on this satellite.

NBC Super Channel's Peter Knight, speaking at SPRSCS, assured delegates his new service would be amongst the first to use the DVB Compliant format. However, there is confusion concerning how NBC plans to implement this change. Presently NBC Super Channel is being uplinked as a part of the data stream originating in Hong Kong via PanAmSat. SA D9222 receivers in use are either "on loan" by NBC or provided by the service user. NBC Super Channel began a 24 hour broadcast day on 15 January but describes the present schedule as a "work up" to a formalised schedule scheduled to begin on 15 April. The programming is a mixture of Hong Kong and USA produced shows and includes the NBC network's "Today", "NBC Nightly News" and "Tonight with Jay Leno" showpieces. Sports (USA college basketball, auto racing) are a part of the weekend schedules and there are a couple of movies each week plus a pair of continuing saga soap operas from the NBC USA archives. NBC Asia has notified affiliates that it intends to be "DVB Compliant" by April but this seems unlikely given the uncertain status of the uplink facility provided by PanAmSat.

German broadcaster Deutsche Welle (DW) is scheduled to sign formal contracts with Anglo-French service TV5, Spain's RTVE and Italy's RAI today (February 23rd) in Madrid. As Programme Distribution head Johannes Firsbach told a seminar session during SPRSCS in Auckland, "*Our concept is to provide the very best of European national television on a single transponder using DVB Compliant technology to the Pacific and Asia.*" A fifth European programme source is also likely to become a part of the mix which presently hopes to begin transmission on AsiaSat 2 (transponder 10B, horizontal; 4,000 MHz downlink) on 1 April. The exact start date for the digital "bouquet" of services could be delayed, however, by a shortage in DVB Compliant receivers. DW provided attendees at SPRSCS a detailed status report on DVB Compliant receivers and listed ten firms world-wide claiming to be producing the new receivers. CTD contacted each of the firms and found none are presently able to ship DVB Compliant receivers, and in fact many are still confused by the DVB Compliant "standard." One German firm told us, "*We cannot begin production of receivers until there is a standard and we do not presently believe that such a standard has been adopted.*" In actual fact, the DVB Compliant standard has been widely recognised in Europe for 15 months and the launch of the DW service has been predicated upon this standard for more than a year. That major receiver suppliers in Europe are not yet aware of this fact is at best disconcerting.

Radio Television Portugal (RTPi), which began broadcasting on AsiaSat 2 during January, has transmission problems. The signal level (footprint) arriving in Australia and New Zealand is as much as 5 dB lower than predicted and initially there was a fear that the transponder on As2 (9 vertical) was incapable of greater power (SatFACTS February 15th). This may not be the case. RTPi completes its own world-circling global network with As2 and is to use a relay ground station in Saudi Arabia to transmit to As2. This station is not presently operational (latest schedule - sometime in April) and on an interim basis the RTPi Lisbon originated service is being taken off of Russian Stationar 12 satellite by a ground station located in Macao. There it is re-uplinked to As2. Unfortunately the Stationar 12 satellite is in inclined orbit and must be tracked by the Macao ground station. This tracking is not always perfect and often the quality of the RTPi reception will change dramatically in a few seconds time as the Macao station loses and then regains "tracking" of the Russian satellite. Thus the signal is flawed as it is redirected towards As2 and some (perhaps a majority) of the "sparklie" noise seen on RTPi reception through AsiaSat 2 is in fact there on the uplink to the satellite. When the Saudi uplink is completed, RTPi will come directly from Eutelsat (covering Europe) to As2 through Saudi, bypassing the uncertain Stationar 12 middle link. RTPi is of more than passing interest to cable operators as it broadcasts more than 100 European soccer contests each year in free-to-air analogue format.

Saudi Arabia's national television service is testing a feed on Russian Gorizont 18 (140E) on the same transponder where a Muslim service was previously located (receiver IF of 1425 MHz). The Saudi service operates approximately 15 hours daily starting at around 4PM NZST and includes the full national service programme schedule. Unfortunately this Russian satellite is seriously inclined (+/- 4.4 degrees) and full-time reception requires manual or automated tracking by the dish.

A six programme channel satellite delivered service originating within a "brand name" New Zealand television production facility has established June 1996 for a trial and training run period. The service would be transmitted on an as yet unidentified satellite using DVB Compliant MPEG. Programming on six initial channels would be designed to operate 18 hours per day per programme channel with programme blocks of six hours. A block might occupy 6PM to 12 midnight in its initial first airing and then repeat the next day from 6AM to 12 noon. Each six hour block would be utilised three times. Programming plans allow for 48 minutes per hour of actual programme content and 12 minutes per hour of commercial or promotional content. The six programme channel package is being designed to "*deliver by satellite to cable headend clients within and beyond New Zealand.*" The proposed service would "*be created in pairs for two time zones (with) each pair drawing on the same programme segments but different commercial and promotional content.*"

Long March rocket launch failure February 15 carried Intelsat satellite pre-sold to Murdoch + (cable giant) TCI consortium that planned South American DTH services. The Murdoch-News Corp contract with Intelsat carried a US$200m price tag. The rocket with Intelsat 708 on board was barely clear of the gantry 5 seconds after initial thruster firing when it veered sharply and nose dived into the nearby terrain achieving only 50 seconds of total flight. For Intelsat this was the first total launch failure of any of its satellites in the history of the consortium. Intelsat had agreed to "*spread the launch business*" and bring in the relatively inexperienced Chinese launch industry to their commercial launch programme largely out of respect for the need to share the business with the developing Chinese marketplace. In last 12 months, 2E launches have gone 50-50 with two launches and two disastrous failures. Intelsat has satellite 707 scheduled for launch on March 2 by Ariane launcher and it will now replace lost 708 at the 310E orbital position. Intelsat was "*fully insured*" (US$204.7m) against a launch loss.

Does Rupert Murdoch ever balance his chequebook? In late January auction conducted by (US) FCC, alternate telephone company MCI bid US$682.5 million for rights to build and launch a direct to home (DBS) broadcast satellite to orbital location 110W. Murdoch? Day after winning 110W, MCI announced deal with News Corporation to joint partnership the new DBS satellite at this location with an investment in excess of US$1 billion. Murdoch himself told the press, "*We are coming into this marketplace two years after the first players came on the field* (Hughes DSS, more recently four additional DBS players) *so we will offer better, less expensive technology*." News Corp will be responsible for satellite design and programming while MCI will concentrate on sales, marketing and billing. Murdoch told press he expects to spend US$500 million for satellites and launch, an addition equal amount for ground facilities, marketing and personnel. You have to admit that keeping your check book balanced is easier when you deal in round numbers like "500."

A reversal. Normally Russia's inclined orbit satellites cause interference to geostationary satellites and diplomatic attempts to resolve these interference issues have fallen on deaf Russian ears. Currently, satellites operated by Russian on either side of recently launched AsiaSat 2 cause intermittent interference to AsiaSat 2 users. Now the Russians are complaining about PanAmSat PAS-4 which recently took up station at 68.5E. The Russians say their Statsionar 20 satellite has operated from 70.0E "for many years" and the 1.5 degree spacing separation between the two is creating "intolerable interference" to the Russian satellite. The US is not so certain and believes the Russians have an unlisted (as in not registered for orbital location) "spy satellite" operating in the same region. The Americans believe the Russians in filing the protest with the ITU are seeking to "cloak" both the existence and identity of the spy satellite, attempting to hide it "behind" Statsionar 20.

US telephone giant AT&T is laying out US$137.5 million to purchase a minuscule 2.5% of America's first DBS service DirecTV founded by Hughes Communications. DirecTv ended 1995 with 1.25 million subscribers and expects to top 2 million by September. Here's the plan: Nobody but nobody has the marketing clout in USA of AT&T. The telephone company knows more ways to capture people's income than even the US government. AT&T's role in the DirecTv world will be to build the DirecTv subscriber rolls. Under the terms of the 2.5% buy-in agreement, the greater the number of AT&T telephone clients who become DirecTv television subscribers the greater the equity position AT&T can earn in DirecTv. Pretty swift way of moving into the big leagues of marketing for the people at DirecTv. All the telephone company has to do to end up owning 30% of the satellite TV firm is bring in millions of new customers (who, of course, also happen to be AT&T customers). Did AT&T think of this all by themselves? Not quite. In related story, the 50-50 joint venture between Murdoch's News Corp and alternate telephone provider MCI was the incentive. MCI announced plans to direct market to its 28 million long distance subscribers the new direct to home TV service which it will partner with Murdoch. MCI said they would offer an MCI brand of DSS TV receiving system to its telephone customers, add the TV monthly charges to the monthly telephone invoices and otherwise "merge" the telephone and television service operations into a single entity. AT&T had no choice - do the same thing on their own or buy into an established DSS provider and offer the same marketing deal.

The launching of satellites for US based firms (such as Intelsat) has become a political "hot potato" in Washington. Recently the Clinton administration has signed agreements with the Ukraine (agreeing to allow 20 launches of US spacecraft by 2001) and China (same terms). On the table, unresolved, is an agreement that would allow Russia launch vehicles to also participate in future satellite launches. The agreement with Russia has been spotlighted by the still festering take over of Pacific-Asia satellite operator Rimsat's two satellites (130 and 142.5E) by the Russian Space Agency (RSA). Influential members of Congress from Indiana (the state where Rimsat maintains US corporate offices) have been especially vocal, branding the August take-over of Rimsat by RSA as "space piracy." The claim is that Rimsat built up the customer base and RSA then took over the satellites. Rimsat (Indiana) claims it is losing US$2m per month in revenues and further claims US$78.5m in damages from the "expropriation" of the satellites. Representative Mark Souder of Indiana has gone on record stating, "*In my opinion the Rimsat issue should be considered in evaluating the number of commercial launches to be made available to the Russians. If the Russians violated their contract with Rimsat, then the United States should not facilitate their involvement with other US companies*." The Russians maintain they seized the two satellites because Rimsat had defaulted on contractual payments. However, the payments appear to have been for additional satellites (Rimsat 3 and 4) and apparently had nothing to do with the ongoing operation of Rimsat R1 and R2. A US court order demanding that the Russians return the two satellites to Rimsat control has been ignored by the Russians who believe they are not subject to US court orders. Two attempts to place the matter before a binding arbitration board have failed with the Russians backing out of the arbitration agreement at the last moment.

Gibraltar? US firm GE Americom is negotiating with the government of Gibraltar to become the home for a new 12 satellite world-wide network. Gibraltar, which has status before the ITU, is being requested to clear with the international satellite location registration agency the following orbit spots: 23, 15, 10 W; 3, 37.5, 47, 51, 97, 100.7, 105.3 and 108.2E. A check of existing satellite allocations suggests virtually all of these locations would be for Ku band frequency satellites. If the agreement moves ahead, GE Americom will construct a satellite uplink and production facility in Gibraltar to transmit to each of these satellites. GE Americom is the largest US satellite operator presently and has recently made several deals with European satellite space segment holders for partnership deals. In year just ended, parent General Electric reported profits of US$6.57 billion.

Planning ahead. In filing to US FCC, PanAmSat cited plans for PAS-21 at 68.5E (now occupied by PAS-4) and PAS-13 to 93W. 68.5E is also planned home for PAS-6.

Yet another digital video format? Japan's Nippon TV network has shown off a new frame doubling technique which it says it will attempt to use as a standard for the next generation Japanese DBS satellite (BS-4). The system doubles from 30 to 60 frames per second (PAL 25 to 50) transmitted which Nippon claims results in a far higher definition picture than merely doubling the number of lines on the screen. The system has a name: Progressive Digital Broadcast System (PDBS). Matsushita has a prototype set top decoder developed and Texas Instruments plus Toshiba have built encoders for the transmission end of the circuit. Sanyo has agreed to be first with the consumer reception equipment.

PanAmSat PAS-3 went into commercial operation providing digital MPEG service to Latin America at 7PM February 19th from 43W. The original PAS-3 was destroyed in a failed Ariane launch attempt in 1994. Services on board include Discovery, ESPN, Televisa, Turner, Viacom, Artear, Canels 4, 9 and 13 (Paraguay), Caracol, China Central Television, Cinemax, Country Music Television, HBO Ole, ImpSat, Liberty, NBC, SiTV, Sony, 20th Century Fox, TVN, TV-5, Universidad Catolica and Warner Brothers. The DTH service is being operated by a partnership of News Corp, Globo (Brasil), Grupo Televisa S.A. (Mexico) and Tele-Communications International (TCI). PanAmSat's next satellite, PAS-6, is scheduled for this December and three additional satellites are scheduled for 1997. Amongst the 1997 launches, the second Pacific Region satellite for PanAmSat tentatively spotted at 171.5E.

South African MPEG is not well. Massive problems continue to plague the roll out of direct to home (DTH) Ku band MPEG MultiChoice DStv service operated into South Africa through PanAmSat PAS-4. Apparently there are problems at the encoding (uplink) end as well as with Pace model DVR 500 IRDs (receivers). The encoding using a system developed by Iredito continues to produce annoying artefacts (video drop out, annoying receiver squeals) which MultiChoice admits to but seems unable to cure. More to the point than the transmission problems, field reports relate 4 out of every 10 PACE receivers are failing within ten minutes of being put into service. The receiver problem involves excessive overheating of the units which users describe as being so extreme that placing a hand on the case results in a third degree burn (immediately followed by the receiver quitting altogether, all within ten minutes of turning on). The PACE units have developed a bad reputation very quickly; so much so that when receiver competitor Panasonic lost production capability at a West Cape facility in December causing a massive shortage of receivers in the region, PACE flew in an emergency shipment of 13,000 receivers to take up the slack. As "nice" as that was of PACE, more than a month later only 2,500 of the 13,000 receivers had been sold; the public simply does not want the "hot plate" units preferring to do without their much anticipated DStv and waiting for Panasonic to come back into production. Our SatFACTS Monthly looks at the status of the PACE receivers in the forthcoming March 15 issue.

Hong Kong based Television Broadcasts Limited International will be utilising PanAmSat PAS-2 C-band for satellite programme distribution throughout Asia and the Pacific. The firm has been leasing Ku band space for nearly one year and joins other Hong Kong Chinese programmers CCTV and CTV plus Singapore based TSC.

Star TV. Another announcement, another clue to possible start date for Digistar service from AsiaSat 2. Company has announced plans to begin serving hotels, cable systems and schools throughout Japan in April. Star TV benefits from recent liberalisation of Japan regulations that previously prohibited importing of TV programming by Japanese cable systems and others.

Digital TV and Radio

STAR TV's AsiaSat MPEG delivered multiple channel television services will not be DVB Compliant to the extent that DVB Compliant receivers will be capable of being unpacked, installed and turned on for the new services. STAR is presently operating an MPEG-2 test service on AsiaSat 2 (3740 MHz downlink, vertical polarisation) with a symbol rate of 28.100 kBd and forward error correction of 1/2. A test conducted by our SatFACTS Monthly publication found that Australian Galaxy service receivers could be manually reset (using on screen instructions incorporated into the Galaxy receivers) to receive this test signal service (see SF for March 15). STAR Hong Kong advises CTD the AsiaSat 2 service will when fully operational be "encrypted" and require specific receiver authorisation for each location through a conditional access software routine that will be "*Star TV unique for AsiaSat.*" This simply means that receivers must either be pre-authorised for the STAR services before being installed (they will retain such authorisation in memory even when the power is off) or require authorisation after installation on a receiver by receiver basis. The present tests are "open key" and require no authorisation.

Scientific Atlanta has advised New Zealand distributors that a DVB Compliant digital receiver designed for consumer use at the DTH level will be available in the US$600 region. When? "*SA assures me that when a broadcaster actually begins utilising DVB Compliant format they will supply receivers,*" reports Telsat Communications Ltd's Selwyn Cathcart (06-356-2749).

New transmission antennas for 9 New York City television stations is being built atop World Trade Center. The common antenna structure will allow the broadcasters to begin parallel to analogue or separate HDTV broadcasting for the New York City metropolitan region.

US FCC forecasts that 32% of all American households are likely to purchase digital TV receivers within seven years and says that is not good enough or fast enough. Agency is seeking ways to ensure the transition from analogue to digital happens in shortest possible period of time. Reason? The sooner TV broadcasting stops being analogue, the faster the federal agency can reclaim the VHF and UHF frequencies presently used by these broadcasters. And once they get them back - they can sell them to highest bidders.

Short of chips. US direct to home Ku band satellite package operator Primestar has delayed introduction of MPEG-2 receiver hardware until "end of 1996." Primestar had announced one year ago it would convert all of its DTH subscribers to MPEG-2 receiver systems during first quarter of 1996. They blame the delay on General Instrument's inability to deliver the new MPEG-2 IRD receiver units and GI in turn blames the shortage of MPEG-2 chips. GI says the delay in change out (in which Primestar purchases new MPEG-2 IRDs from GI) will reduce GI 1996 earnings by approximately US$500 million; or, US$500 per IRD unit. Primestar ended 1995 with just under 1 million US homes as subscribers, forecasts by end of this year it should be approaching 2 million subscription homes; all of which will require a new MPEG-2 IRD. Now that is one massive "change out!"

Consumer Electronics

Another digital music format, although not perhaps for the average consumer. Sony is displaying Direct Stream Digital (DSD) technology which it claims pushes the upper and lower frequency limits of conventional (CD) recording systems to a new level of performance. Sony calls the DSD system "*Ultra-high-fidelity*" and believes the system will find application for making studio masters and for archival purposes. DSD raises the upper frequency limit to 100 kHz (well beyond the upper auditory sensory limits of most human beings near 15 kHz) and in the process allows individual audio tracks for each instrument in an orchestra to be laid down separately. In this way a user of the proposed digital discs could command the playback system to play any of the instrument tracks desired at any level or mixture of levels desired. Using the same disc technology as has been accepted for DVD (digital video disc). Sony says up to 74 minutes of multi-channel music will fit onto a single disc. Philips and Pioneer are said to be working on similar multi-channel disc formats.

Nintendo claims China has more than 20 million of their Super Entertainment System Consoles in operation. Unfortunately for Nintendo, virtually none of these consoles were manufactured by Nintendo and further the firm claims more than 100 million Chinese made piracy copies of their game cartridges have been manufactured and sold there. Nintendo says this piracy cost the firm US$1.5B in lost royalties and revenues in 1995 alone. Before you shed a tear for Nintendo, read this: Nintendo has now sold 1,000,000,000 Nintendo games to this planet. Best selling game? Super Mario Brothers with 40,000,000 units sold in 12 years. China does appear to be making an effort to curb the piracy activities but even that has a bit of oriental irony. The China Foundation for Consumer Protection recently announced a cash prize equal to US$600 for the individual who showed the greatest personal skills in rooting out piracy. Chinese law requires that if a consumer purchases a pirated and counterfeit product that the shop selling the illegal item must give the consumer a double refund if the product identified as illegal is returned to the shop. The winner of the prize money was Wang Hai who figured out that he could earn a very good living by deliberately seeking out counterfeit goods, buying them and then bringing them back for a double refund. He then reinvested his double refund into purchasing twice as many counterfeit items which he then returned for another double refund. After several months of this repetitive activity, Wang Hai had built up a tidy bankroll. His selection for the prize money by the CFCP which revealed how he used the system to gain personal wealth has attracted considerable derogatory press within China.

Holiday sales season. New Zealand does not track December sales specifically against annual numbers but in North America the so-called Christmas selling period turned into a dumping ground for low margin products and packages. The most glaring example? In Miami a consumer could purchase a 25" TV, a camcorder and a hi-fi VCR for US$650 (NZ$1062). Not individually, all together. The retailers were not happy with the profit margins, the distributors and manufacturers were pleased with the volume of sales. After the holidays, the sales for direct view (non-projection) TV sets in USA fell again, this time to lowest January levels since 1985. The ten year low has US retailers concerned the public is standing back and waiting for the new HDTV and digital compatible TV sets. Only projection TV set sales were up (by 21.2% from January 1995).

Cellular telephones. We all know a cellular phone sold for NZ$49.95 is being marketed at below cost through subsidies provided by the telephone network operator. So just what does a really inexpensive cell phone cost these days and what is the real subsidy? One clue: Japan's Mitsubishi has begun shipping what it describes as "*The world's least expensive cellular phone*" from a new plant located in the state of Georgia (USA). The price? US$80 to Mitsubishi for the unit offering 105 minutes of battery-talk time with a built in 2 hour rapid charger. Mitsubishi says the model will have no retail price because it will not be sold: "*The unit will be given away by retailers and cellular carriers in exchange for recipients signing up for service.*"

US Supreme Court has ruled that FCC agency has clear legal right to mandate that TV receivers shall be equipped with the so-called V (violence rating) chip. TV broadcasters and TV set manufacturers had protested the FCC decision which will require all programmes to be rated by the broadcasters and all TV sets (with 13" and larger screens) to be equipped with a chip allowing consumers to set levels of violence permitted to be shown by the set. The move is in reaction to concerns that violence on television is spawning violence in American society. With the chip-equipped TV sets, a parent or child minder may key in levels of permissible violence for the receiver and young viewers will simply not find programmes on the screen if the violence rating system grades the showing above the level set.

DVD patents. Those who developed the new digital video disc format will share in the spoils when the new video on a disc home entertainment business launches late this year. One model could have been the CD patents. Sony and Philips shared the patent rights to the original CD format and the pair agreed when (audio) CD began to allow Philips to administer the granting of manufacturing licences to third party firms. Years after this agreement went into effect, US Department of Justice questioned methods used by Philips to administer the CD patent system and this resulted in changes to the licensing rules. Philips and Sony are routinely paid 6 (US) cents for each CD (disc) manufactured by rights licensees. In the DVD video world, the principal patent holders are Philips, Sony, Matsushita and Toshiba. Their individual patents form the bulk of the "patent pool" which will be administered by an yet unnamed firm. Firms that manufacture either DVD players or digital video discs will obtain a license from the "pool" and pay royalties to the pool. The US Department of Justice has asked to be a party to the negotiations leading to the formation of the patent pool.

Sony believes it will sell 500,000 DVD players in first 12 months, ramp to 1 million in year 2, 2 million in year 3. Thomson expects to arrive in US market with DVD player units by September with a target retail price of US$499. Toshiba plans two models at US$599 and $699 with "advanced features," also prior to 1 September. They believe total US market for the new technology will be up to 2 million units in the first year. Philips says it won't have players available until the "end of 1996 or early 1997" while the US's largest video chain Blockbuster as well as movie distributor Disney both also say they will wait until early 1997 to enter the DVD marketplace. It all may be a moot point until the movie makers are on stream with movies and other products in the DVD format. Only a handful of titles are expected to be available by September with most firms anticipating their first extensive catalogue releases late in 1996. Still unresolved amidst all of this jockeying for early position is the significant matter of "regional stamping." Movie distributors are insisting that NTSC format DVD film products carry some form of encryption system to prevent the movies from being played on a PAL format player. Reason? Movies are released in US prior to Europe or the balance of the world and movie rights owners fear compact discs released in USA will find their way in luggage or shipping containers to portions of world where the same movies are not scheduled for release (to PAL format users) for months or even years. A proposal to encode the audio differently on NTSC format discs from PAL discs is believed to have the best chance of surviving the final decision making process. What that means, of course, is that anyone who wants early release movies found only in the USA will also purchase an NTSC player in the USA to be able to play their discs back home in New Zealand (et al). With New Zealand TV sets now routinely including the ability to play an NTSC format signal, none of this attempt at controlling "movie release windows" outside of the USA will be much of a deterrent to a serious movie-phile (CTD 9510, p. 12).

South African import duties on TV receivers has been cut from 60 to 40% with the intention of reaching a 25% (GATT) level within two years. Accordingly, Philips is closing its plant there citing increased competition from imported models and an increasing quantity of non-tariff paying smuggled TV receivers now reaching the country. Sales in 1995 grew by 20% reaching 450,000 units sold for the first time.

How much is a VCR worth? If you mean a machine into which you insert a cassette loaded with recording tape so as to be able to record the picture and sound of a TV programme, try US$95. Walmart chain of discount stores is test marketing recorder in 200 stores and plans national rollout of unit if tests are successful in

September. Unit is made by Orion Electric in Thailand. There is a simple way to tell when a technology has run its course and is scheduled to be replaced by something better: The prices come down so low that nobody makes any money dealing with it. The under (US)$100 video recorder has arrived and just around the corner here come the new all digital format recorders that will start at US$1,200.

Sanyo has shown a GPS receiver package that any serious camper will require. With a built-in TV tuner, 3.3" TFT colour display, CD ROM player, CD playback and equipped with Etak mapping software, the on screen display not only tells you where you are vis-à-vis mapping co-ordinates as calculated from GPS satellites, but it also overlays on screen from software memory the exact area you are in. If by chance you cannot determine how to get "un-lost" the six AA batteries will operate the unit's entertainment features for five hours time. Cost? US$1500.

Batteries that tell user how much power remains. Duracell and Eveready are both readying new AA size batteries with this feature built in, expect to be in marketplace by April. Batteries include indicator of power remaining against new battery full power. There is a patent infringement suit coming out of this new product innovation; because of an error in US patent office two separate firms received patent on same concept at about same point in time (1991).

Another possible competitive worry for Telecom? San Diego Gas & Electric has teamed with electronics manufacturer Philips to install 30,000 "Screen Phones" in San Diego homes by end of 1996. The phones are a combination of network terminal and automated bridge to on line services through Internet and will be gifted to the consumers without charge. Philips comes out by participating with the utility company in the income derived by the consumer use of the special terminal phones. The electric utility sees this as an opportunity to enter into the telecommunications world with an innovative new service not presently available through normal telephone instruments. The utility and Philips both claim that if the first 30,000 "free Screen phones" work as believed and generate sufficient revenue, they will then roll out an additional 500,000 of the free phones to the balance of the homes in the greater San Diego and Orange County region. So how long before your local electrical utility challenges Telecom here in New Zealand?

Cable/Fibre/MMDS/Pay TV

Far North Cable TV (FNCTV) is conducting a six month trial programme with The Filipino Channel, delivered via PanAmSat PAS-2 satellite to the cable system at Doubtless Bay. TFC is a 24 hour per day English plus Filipino language service designed for Filipinos living in North America plus Hawaii and Guam. FNCTV has also added NBC Super Channel and Radio TV Portugal during the past 30 days bringing its present channel count to 21.

Barryvision, a cable system headquartered at the Barrycourt Motel in Parnell (Auckland), has added Radio TV Portugal (RTPi) and China Central Television to its channel line-up. The motel facility now has 14 operating cable channels on the facility, will add five more when the Deutsche Welle European bouquet service becomes available from AsiaSat 2 in April. During March, Cable Vision Systems (CVS; 09-478-5460) is scheduled to install a 13 channel Movie On Demand pay per view service into the Barrycourt. The CVS package includes a fully automated movie to room selection system backed up with automatic logging and posting to room accounts of movie charges. Barryvision will be running a split band / split-use system inside the facility with 48-300 MHz (22 channels in the system) carrying free to air channels from both local off-air antennas and its 4 satellite dishes, and, 327 to 447 MHz for the CVS movie channels. When the Barryvision system begins cabling of the nearby Parnell neighbourhoods, it will use the same 48-300 MHz services plus a separate 300 to 450 MHz feed carrying cable programming channels (40 total channels to the neighbourhood).

Kiwi Cable is no more; new name change is Saturn Communications. CE Jack Matthews: "*We went through a rigorous review to determine the kind of company we want to be. As our business is going to be much broader than cable TV, we needed a name and image that is consistent with the breadth of service, as well as reflects the essential values of our organisation; leadership, vitality, responsiveness and a commitment to enhance the lives of our customers.*" Their planned $40m investment in the (lower) Hutt Valley is being built around General Instrument (GI) cable television hardware and technology with built-in capability to provide telephone, Internet, and interactive as well as television communication services.

SATURN

No more hype. Telecom parent Bell Atlantic has finally begun real world testing in 200 homes in Dover Township (NJ) for the first operating phase of its much promised "interactive television network." The New jersey system has been under construction for four years and Bell Atlantic had promised it would be the first operational commercial interactive system in the world. The system has been designed to reach 38,000 homes so the 200 home test is but a "Beta Test" start. How well it all works (or does not work) may translate to the ultimate Telecom New Zealand plans for their 1993 installed HFC cable test systems in Auckland suburbs.

Terrestrial Broadcasting

Power of the number "six": SKY Network's Panorama Drive facility in Mt. Wellington could more than double in work area size over next twelve months. Building planners are surveying "pushing backwards" into property to add an additional six production suites to existing five. Within the facility key employees are "plugged into" two new possible programming sources being considered for additional programme channels (one a children's channel, the second a music channel). In a perhaps related plan, Telecom NZ and Television New Zealand are individually shopping for hardware to produce six programme channels. Telecom is still attempting to gain a direct stock ownership interest in SKY while TVNZ already has such a position. "Six channels" happens to be the number of MMDS frequencies available to Telecom after July (see CTD 9502, p. 2). However, six also happens to be the number of digitally compressed MPEG television programme channels which will fit comfortably into a "standard" 36 MHz wide satellite transponder and one TVNZ engineering paper ("*Multi-Channel Programme Service*," 19 December 1995) describes a six video (programme) channel system wherein six programming packages would be cycled to make up a full broadcast day. Similar "shopping trips" by TVNZ, Telecom and Sky have been floated in previous years but never in unison with all sharing the same "details" of planned operations. Are there three separate plans here, or more likely, three separate groups all planning the same channel expansion project and each chasing the same hardware packages without respect for their stock holding partners within Sky?

Look for some major changes in the Sky Network sporting packages by 1 July. Sky's existing contract with ESPN runs out shortly and under the recent world-wide agreements between Rupert Murdoch and Sky investor TCI sports "branding" in the Pacific will come under the name of "Fox Sports" in the future. Sky's present sporting channel line-up is a locally created mixture of programming from the ESPN network and multiple other sources with ESPN making up approximately 75% of the typical Sky Sports day. Fox Sports, in use already in Australia through the Galaxy and Fox-Tel distribution systems, is likely to become the primary supplier of sport programming product for Sky. The Sky situation with ESPN is further complicated beyond the natural run out of their present contract by the 0.41% stake which ESPN holds in Sky; not enough to entitle them to a Board seat but enough to cause some confusion amongst the other stock holders. The primary decision regarding future use of ESPN programming by Sky may revolve around ESPN distribution to other New Zealand users if Sky no longer uses sufficient of the ESPN programming to renew their present "exclusive" contract. Sky will not want ESPN competing with them through cable TV or broadcast affiliations and may be forced to guarantee ESPN sufficient revenue to keep ESPN out of the general marketplace. One possibility: By being affiliated with both Fox Sports and ESPN Sky could programme a full-time sports channel plus major portions of a second channel. Their "Orange" service already carries sporting events when there are scheduling conflicts and could become the "*Sports Two* " service.

Sky's Rugby programming coup that has grabbed national headlines may turn out to be good news for UHF broadcasters and some cable system operators. Sky has shown a willingness to "share" their Rugby programming with regions such as Gisborne and Greymouth by authorising broadcasters and/or cable operators to rebroadcast the Rugby service feeds in a local area. A Gisborne UHF station and the Gisborne cable service have both been granted verbal approval (written contracts are said to be in process) to redistribute the Sky Rugby coverage. The Gisborne cable operation is rushing to install a (13 GHz) point to point microwave link to take the Sky sports channel feed as delivered into the Hawke Bay region "off air" and then directly to their cable television headend. Not all Sky-neutral areas (i.e., regions where Sky is not available presently) will be so fortunate; the Greymouth cable system would require several hops of microwave to take the nearest (Christchurch) Sky service while in northland Far North Cable TV in Doubtless Bay would require as many as five microwave hops to bring Sky to the cable plant.

German international broadcaster Deutsche Welle has signed programme affiliation contracts with UHF television outlets in Warkworth, Gisborne, Rotorua, and Doubtless Bay and an audio feed service contract with Tourist Information FM. The German broadcaster will deliver up to 10 hours per day of English language programming to the new affiliates via AsiaSat 2 satellite in the DVB Compliant MPEG format. In the case of Tourist Information FM, the nation-wide tourism radio service operator will take portions of daily German language newscasts which will be edited and sent via telephone links to key German language (tourism) FM outlets.

India's Supreme Court has ruled that an independent, non-government operated agency should be established to oversee and regulate if required the importation of television programming into the country from foreign sources. The state run broadcasting organisation had sought a ruling that it, as the broadcasting authority in India, should have the power to determine which non-Indian television programmers would be allowed onto cable systems there.

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